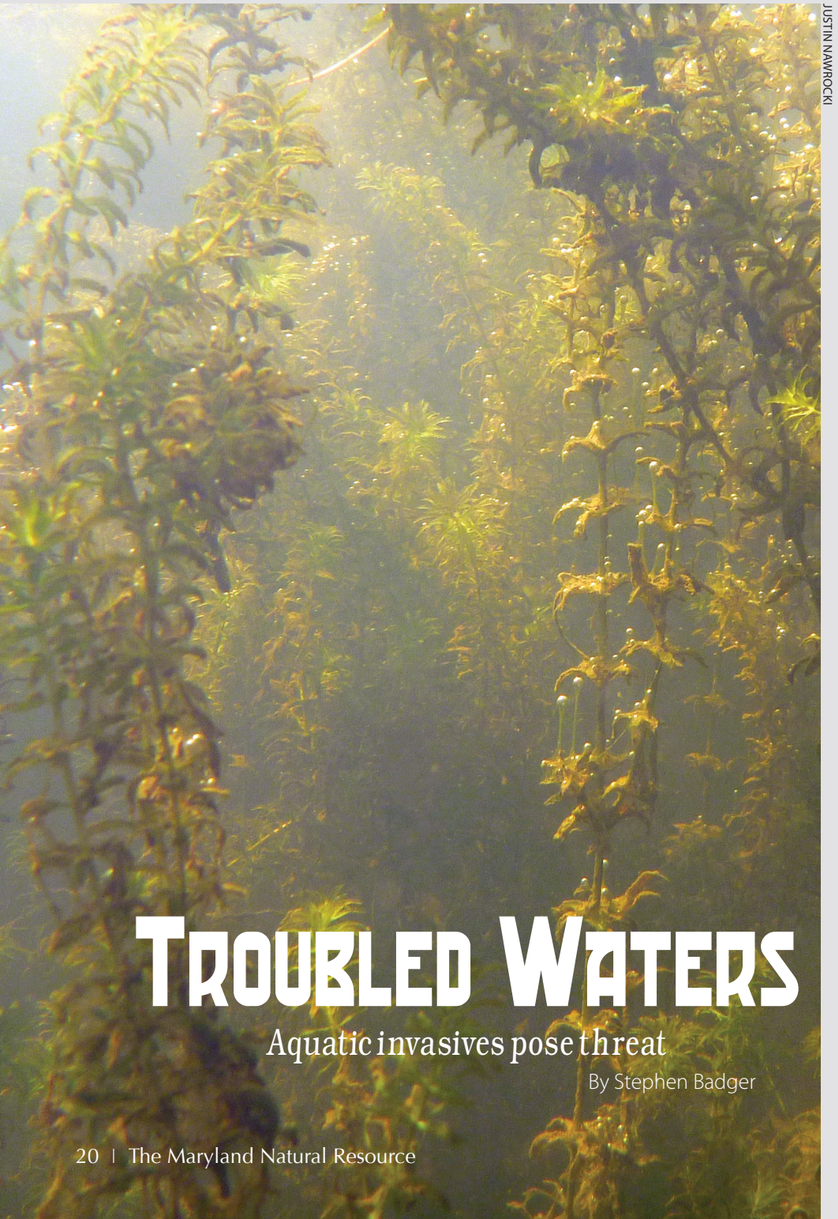
JUSTIN NAWROCKI

Troubled Waters

Aquatic invasives pose threat

By Stephen Badger

Fast Facts

- Invasive species are non-native organisms that produce negative effects on the environment, economy or human health.
- Boaters and anglers are the primary means by which aquatic invasive species are spread.
- Invasive species are the second greatest threat to biodiversity after habitat loss.
- Hydrilla is a problem in many states and is listed on the Federal Noxious Weed List.

Each year, hundreds of thousands of recreational and commercial vessels descend upon Maryland's beautiful waterways as part of the busy summer season. Whether they're brought here to fish or float, from near or from far, they could be unwillingly taking part in the escalating battle against aquatic invasive species.

DNR biologists monitor and/or control multiple aquatic invasives including zebra mussels, northern snakehead, Eurasian watermilfoil, water chestnuts, didymo and many others. But there is one problematic plant that DNR hopes to shed greater light upon: hydrilla.

Hydrilla is a species of submerged aquatic vegetation (SAV) that was introduced to the U.S. in the 1950s, most likely as a result of the aquarium trade. It was first observed in Maryland in 1982 in portions of the Potomac River. Within 10 years, the hydrilla presence in the river had grown exponentially and covered nearly 3,000 acres. Today, it can also be found in the Susquehanna Flats, several upper bay tributaries and in Deep Creek Lake.

Identification

Hydrilla looks similar to the common waterweed, elodea. Both have long, slender stems that branch out into whirling leaves. Hydrilla, however, can have up to six leaves. Waterweed normally only has three. Additionally, the edges of hydrilla leaves are visibly toothed, whereas elodea's serrations are minor and not visible to the naked eye.

The threat

Hydrilla thrives in lower light conditions and occupies deeper water than most native SAVs. When left unchecked, it forms dense mats that shade out other vegetation. Though hydrilla beds may initially provide habitat to small forage fish, they are ultimately detrimental to larger game fish. Oxygen recirculation necessary for other aquatic species can be affected as well.

When hydrilla populations are large enough, even surface navigation of host waterways becomes difficult if not impossible. In the Potomac, populations of hydrilla grew so large that they impeded boat traffic to area marinas and mechanical harvest — removing the invasive with mechanical equipment became necessary.

Reproduction

Hydrilla, like most other invasive species, reproduces quite rapidly. To do so, it employs multiple reproductive strategies, defined below.

Sexual Reproduction - The hydrilla found in the Chesapeake Bay is *monoecious*, meaning it has both male and female flowers on the same plant. Small, white female flowers grow at the water's surface.


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Close-up views of hydrilla plants


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Hydrilla easily attaches to boat parts.

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Surveyors look for signs of tubers that may bloom again.

Male flowers must detach from the plant and float upward. Pollen from the male flowers must settle directly on the female flower for pollination to occur.

Vegetative Reproduction -A form of asexual reproduction where new plants grow from parts of the parent plant. Resulting offspring are genetic clones of the parent.

Fragmentation - A process by which new plants grow from pieces — even very small ones — of the original plant. Fragmentation occurs both naturally and as result of the plant's structure being damaged by outside influences.

Tubers and Turions - Energy rich structures that serve as banks of reproductive material. They allow for reinfestation following cold winters, water level drawdowns and herbicide application.

Eradication efforts

Invasive species in general are hard to eradicate. In non-native environments, they have no natural predators. The solution — if one exists — is often times difficult, costly and labor intensive. Hydrilla is no exception.

When hydrilla was discovered in Deep Creek Lake in the fall of 2013, DNR convened a panel of nationwide control experts and explored multiple strategies ranging from no action to biological and chemical intervention. Later, community partners and other stakeholders reviewed the panel's recommendations and DNR began its multi-year campaign of water quality assessments, low-dose herbicide applications and population monitoring.

This summer, DNR is expanding efforts with increased public outreach, educational campaigns and the addition of *launch stewards* who inspect boats coming to and leaving from Deep Creek Lake State Park and, when necessary, make recommendations to boat owners.

"Taking just a few minutes after a boating trip can help prevent lasting damage to Maryland's beautiful waterways," says Mark Lewandowski, DNR biologist. "Spread the word, not invasive hitchhikers."

For more information on hydrilla or control efforts, please email *mark.lewandowski@maryland.gov* ■

dnr.maryland.gov/invasives

Stephen Badger is a public relations specialist in DNR's Office of Communications and a Maryland master naturalist.

Clean, Drain & Dry

Some dangers are very hard to see! A single drop of water, a bit of mud or a tiny plant fragment is all it takes to spread harmful plants and animals. To minimize that risk, DNR asks all residents and visitors to...

1. Thoroughly inspect and clean vehicles, vessels and trailers after any use. This includes bunks, trailer wiring, all engine parts and the water intake area of personal watercraft.
2. Remove all plant material and deposit in dedicated waste stations or trash receptacles.
3. Dispose of worms, unwanted baitfish and fish parts in trash receptacles only.
4. Drain water from boat, motor, bilge, live wells, coolers and bait containers before leaving the launch and leave boat plugs out while traveling.
5. Wash the boat exterior and compartments with a mild bleach solution to kill plant fragments, mussel larvae and fish eggs.
6. Inspect and clean your fishing gear, tackle, anchors and other recreational items.
7. If possible, allow your boat to dry for five days or more before launching in another water body.

House Bill 860

During the 2015 legislative session, the Maryland General Assembly passed a bill to strengthen our state's commitment to aquatic control invasive species.

Currently, vessel inspection and cleaning at launches is a strongly recommended, voluntary measure. Beginning in April 2017, the new law prohibits launch into state-owned lakes for vessels that exhibit signs of potential contamination. Anyone who violates this law may be fined.